Abstracts

Oral 1

Work related health

O1.1 VARIABILITY IN RESPIRABLE DUST EXPOSURE IN A MANUALLY OPERATED COAL MINE IN TANZANIA

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Introduction: Respirable dust was measured among workers in a manually operated coal mine in Tanzania. This study aims at assessing appropriate grouping schemes for an exposure response study on respiratory health effects.
Methods: Full shift personal respirable dust samples (n = 204) were collected from 141 randomly chosen workers among about 600 workers at underground and surface work sites. Variance components were estimated by random effect models.
Results: The arithmetic mean exposure level for respirable dust varied from 0.07 mg/m^3 for office workers up to 25.16 mg/m^3 for pneumatic drillers. Three grouping schemes were evaluated; work site (eight groups), job title (11 groups), and main type of material handled (five groups). The grouping strategy based on work site resulted in the highest percentage of explained variance between workers (83.7%), followed by the job title (77.6%) and material handled (71.4%). High contrasts in exposure between the groups were found for all grouping schemes ($\epsilon > 0.94$). The attenuation of the theoretical exposure-response relation was lower when grouping by material handled (1.5%) than when grouping by work site (5.9%) or job title (5.2%).
Conclusion: According to the minimal theoretical attenuation, the material grouping scheme might be appropriate for studying the association between respirable dust exposure and respiratory effects. Since historical job changes for individual workers were not recorded during the data collection process, cumulative dust exposure cannot be calculated by job title grouping.

O1.2 THE USE OF HEALTHCARE SERVICES FOLLOWING A WORKPLACE INJURY: A STUDY OF WORKERS AND THEIR FAMILIES IN BRITISH COLUMBIA

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Introduction: The pressure of coping with the consequences of a workplace injury affects workers and their family members, resulting in emotional and psychosomatic trauma. This retrospective cohort study investigates the overall and mental health care use of injured workers (who filed a claim in 1994) and their family members in British Columbia (BC), Canada.
Methods: The BC Linked Health Dataset (BCLHD) was used to examine Workers' Compensation Board (WCB) records and publicly insured health services (all visits to health care professionals and hospitals). A matched comparison group of uninjured workers was also selected. We identified family members of these subjects and reviewed health care use five years before and five years after the injury, with special emphasis on mental health care use.
Results: Workers who required time off for their injuries exhibited increased physician (>1.5 visits) and hospital use (>0.2 days) for overall health care and mental health care (>0.3 physician visits, $p<0.01$; and >0.9 hospital days, $p = 0.68$) five years after a workplace injury, compared with the non-injured group (overall: >0.3 physician visits; and <0.3 hospital days—mental health: >0.1 physician visits; and >0.3 hospital days). For workers who did not require time off for their injuries, increased use following the injury was in the middle of these two groups. These patterns persisted when controlling for registration in the BC Medical Services Plan and several workplace characteristics. Similar patterns were observed for the spouses of the injured worker, albeit with smaller changes in use. No differences were observed for children of these groups. This suggests a gradient effect, for health care use, based on the proximity to the injury.
Conclusion: The increased overall health care use following an injury suggests the need for policy makers to focus not only on prevention but also on the social and economic consequences following a workplace injury.

O1.3 HEALTH RELATED JOB LOSS IN THREE RURAL POPULATIONS OF ENGLAND AND WALES

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Introduction: The frequency, determinants, and outcome of health related job loss (HRJL) are important to discover, given a need as the working population ages to maximise job retention.
Method: Male residents of three defined rural areas (n = 34 486) were sent a postal questionnaire about work and health. Incidence rates for HRJL were derived by person-years calculations, and their relation to age and calendar period was examined by Poisson regression. The association of HRJL with other risk factors was explored in a nested case control study. Rates of re-employment following HRJL were calculated.
Results: Information about jobs held for >1 year was provided by 10 559 men, including 1408 (13.3%) who had left at least one long term job for health reasons. The most common underlying health problems were musculoskeletal disorders and mental illness. The incidence of first HRJL generally increased with age, and in all birth cohorts was higher after 1990, especially for musculoskeletal disorders and mental health problems. In comparison with other occupations, HRJL was less frequent in agricultural workers (OR 0.6, 95% CI 0.5 to 0.8) and more frequent in policemen (OR 2.4, 95% CI 1.6 to 3.7) and teachers (OR 2.0, 95% CI 1.5 to 2.7), this differential being even greater when the underlying problem was mental illness. Risk of HRJL was also significantly increased in employees as compared with the self-employed, and in jobs that entailed shift work and demanding physical activities. Of the 1408 men who had left a long term job for health reasons, 862 (61%) subsequently obtained further long term employment, most (>88%) within one year.
Conclusions: HRJL is common, but most workers affected subsequently obtain further employment. Social and cultural factors appear to have a strong influence on the incidence of HRJL, although the physical and psychological demands of work also have an important impact.

O1.4 CORRELATES OF MENTAL HEALTH IN ONTARIO WORKERS: RESULTS FROM THE CANADIAN COMMUNITY HEALTH SURVEY

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Introduction: Mental health (MH) is of increasing concern for workplaces, firstly as an outcome of the work environment; and secondly because poor MH might lead to increased absence or reduced productivity of the workforce. We wanted to know how occupation and work stressors were related to increased risk of MH problems.
Methods: We used the Ontario portion of Cycle 1.1 of the cross sectional Canadian Community Health Survey (CCHS), which had an estimated response rate of 84.7%. The sample included 23 110 working adults, for whom depression was identified using a subset of questions from the Composite International Diagnostic Interview (CIDI). Occupation was reported in nine broad categories, and work stressors were scored with an abbreviated (12 item) version of Karasek's Job Content Questionnaire. Other demographic data were included. Logistic regression analyses, including interactions and using a backward elimination approach, provided adjusted estimates of risk factors. Separate regressions were performed for work stressors scores and occupation category as the main exposure of interest.
Results: The overall prevalence of depression was 7.4%. There was a steady increase in prevalence with quartile of the work stressors score, from 4.9% in the lowest quartile to 12.3% in the highest. The logistic regressions showed that women were more likely to report depression, as were smokers, younger workers, and those not married. The work stressors score remained a significant predictor after adjustment for demographic variables, although it showed several significant interactions. There were significant differences across occupational groups; of specific categories, those doing sales or service jobs had the highest

prevalence (9.8% unadjusted), while technologists/technicians had the lowest (4.8%). These rankings persisted after adjustment for other variables.
Conclusions: Work stressors were confirmed as related to depression. Study strengths included the excellent response rate, large sample size, and coverage of the working population. Weaknesses included the use of self-reported data and the cross sectional nature of the survey.

O1.5 HEALTH RELATED QUALITY OF LIFE AND SICK LEAVE AMONG NORWEGIAN NAVY PERSONNEL

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Introduction: During the past years there have been concerns in the Royal Norwegian Navy that the work environment could have had negative health effects for the employees. As a response to the concerns the Navy decided to make a major surveillance of the health and work environment among the employees. As one part of this surveillance the health related quality of life (HRQL) was measured as an indicator of the general health status among the personnel and especially among those who had sick leave during the last year.

Methods: HRQL was measured by the SF-36 Health Survey as a part of a large, general questionnaire sent to all present employees in the Navy in the late fall of 2002. The results were compared with data from the Norwegian population ascertained the same year. The questionnaire included demographic data and questions about sick leave; occurrence the past year and whether caused by occupational injuries or other conditions at work.
Results: The age and sex adjusted mean scores of the eight SF-36 scales for the navy personnel (n=2265) were significantly higher than for the general population. When individuals without work in the general population were excluded and adjustment for education level was done no major differences were found between the two populations. The navy personnel who had had sick leave for any reason the last 12 months had significantly lower scores on all scales compared with those without any sick leave. The differences were larger for those who had sick leave because of occupational injuries, and even larger for those who had sick leaves as a result of other diseases related to work. Here the differences were more than 0.5 SD for five out of the eight scales.
Conclusions: The HRQL of the Norwegian navy personnel was at the same level as the Norwegian working population in general. There was a strong negative association between HRQL and sick leave caused by working conditions other than caused by injuries.